## Natural Differences Exist in the Invertebrate Community Structure Across NJ

Aquatic invertebrate communities in southern NJ are distinctly different from those in the north because of natural differences in environmental and physical conditions (table 2). This is why the NAWQA urban gradient study focused it's efforts and resources in northern NJ.

**Table 2.** Differences in aquatic-invertebrate communities in 43 reference streams between northern and southern New Jersey can be explained by natural differences in environmental conditions

	Northern NJ	Southern NJ
Most abundant aquatic invertebrates		Worms, clams, midges, black flies, caddisflies, and stoneflies
Environmental characteristics	Steeper channels and higher diss. O2 content	Low pH and low dissolved solids and nutrient content
Streambed characteristics	Mainly rock and cobble	Mainly sand and other fine sediments

## References:

- Barbour, M.T., Gerritsen, J., Snyder, B.D., and Stribling, J.B., 1999, Rapid bioassessment protocols for use in streams and wadeable rivers—Periphyton, benthic macroinvertebrates and fish, 2d ed.: Washington, D.C., U.S. Environmental Protection Agency, Office of Water, EPA 841–B–99–002, 226 p.
- Chang, M., Kennen, J.G., and Del Corso, E.J., 2000, Evaluating temporal changes in stream condition in three New Jersey basins by using an index of biotic integrity: Bulletin of the New Jersey Academy of Sciences, v. 45, no. 1, p. 1–12.
- Karr, J.R., Yant, P.R., Fausch, K.D., and Schlosser, I.J., 1987, Spatial and temporal variability of the index of biotic integrity in three midwestern streams: Trans. of the American Fisheries Society, v. 116, no. 1, p. 1–11.
- Kennen, J.G., 1999, Relation of macroinvertebrate community impairment to catchment characteristics in New Jersey streams: Journal of the American Water Resources Association, v. 35, no. 4, p. 939–955.
- Klein, R.D, 1979, Urbanization and stream quality impairment: Water Resources Bulletin vol. 15, p. 949–963.
- Kurtenbach, J., 1993, Index of biotic integrity study—New Jersey—Passaic, Wallkill, Delaware and Raritan drainages, summer (1990–1993): U. S. Environmental Protection Agency, 32 p., plus appendixes.
- New Jersey Department of Environmental Protection, 1994, Ambient biomonitoring network, Arthur Kill, Passaic, Hackensack, and Wallkill River drainage basins: 22 p.
- Plafkin, J.L., Barbour, M.T., Porter, K.D., Gross, S.K., and Hughes, R.M., 1989, Rapid bioassessment protocols for use in streams and rivers—benthic macroinvertebrates and fish: U.S. Environmental Protection Agency, EPA/444/4–89/001, 174 p.
- Reiser, R.G., 1999, Relation of pesticide concentrations to season, streamflow, and land use in seven New Jersey streams: U.S. Geological Survey Water-Resources Investigations Report 99–4154, 19 p.